URS

September 20, 2005

Ms. Ellen Jackson
Maryland Department of the Environment
Waste Management Administration
Oil Control Program
1800 Washington Blvd
Baltimore, Maryland 21230

Re: Soil Vapor Pilot Test Letter Report
BP Service Station# 3033
14243 Jarrettsville Pike,
Phoenix, MD
MDE Case # 2005-0326 BA2

Dear Ms. Jackson,

On behalf of BP Products North America Inc. (BP), URS Corporation (URS) is submitting this Soil Vapor Extraction (SVE) Pilot Test Letter Report for BP Service Station# 3033 located at 14243 Jarrettsville Pike in Phoenix, Maryland (Figure 1). This Letter Report summarizes results from a pilot test conducted on August 24, 2005. The purpose of this pilot test was to obtain design data for an effective interim remedial measure for this site as requested by the Maryland Department of the Environment (MDE) in a directive letter dated May 31, 2005. In a follow-up letter, MDE approved the proposed pilot test for a SVE system on July 20, 2005.

On August 24, 2005, URS conducted an SVE pilot test at the above referenced site. The pilot test was conducted in two phases. Phase I of the pilot test consisted of operating a five (5) horse power (HP) blower, connected to tank field well TF-05, at varying speeds (425, 825, 1275, and 1700 revolutions per minute (rpm)). Phase II of the pilot test consisted of manifolding all four (4) tank field wells (TF-02, TF-03, TF-04, and TF-05) together and operating the blower at 1700 rpm. During both phases of the test, vacuum readings were recorded from all four (4) tank field wells. Vacuum readings from two (2) nearby monitoring wells (MW-01R and MW-02R) were also measured using a magnahelic gauge at 10 minute intervals (Figure 2). Volatile organic compound (VOC) readings were recorded from the blower's exhaust using a Photo Ionization Detector (PID) throughout both phases of the test.

During Phase I of the pilot test, the blower was operated at each of the five blower speeds for 60 minutes. With the blower operating at 425, 825, 1275, and 1700 rpm at average extraction rates of 56.8, 53.6, 57.6, and 66.2 cubic feet per minute (CFM) respectively, average vacuum pressure readings were achieved as shown in Table 1.

During Phase II of the pilot test the blower was manifolded to all four tank field wells and operated at 1700 rpm, while pressure readings were recorded from the six (6) wells in the surrounding tank field area. At an average flow rate of 62.0 CFM, average vacuum pressure readings were achieved as shown in Table 1.

VOC recovery was minimal during Phase I and Phase II of the pilot test (Table 1). During Phase I of the pilot test, an average PID reading of 0.37 parts per million by volume (ppmv) was detected. A maximum PID reading of 3.7 ppmv (14.8 ppmv corrected for dilution) was observed

40 minutes into the first phase of the pilot test. VOCs were not detected during Phase II of the pilot test.

In compliance with the May 31, 2005 MDE directive letter and a verbal directive from MDE (Ms Ellen Jackson, June 26, 2005) to install a SVE system, URS will submit a Work Plan detailing the systems design specifications (i.e., conduit size, blower size) by Mid October for approval prior to system installation. A schematic of the proposed system layout is presented in Figure 2. URS will continue to gauge the on-site monitoring wells monthly and sample both the on-site monitoring wells and the on-site potable water well on a quarterly basis.

If you have any questions or require additional information, please feel free to contact Nick Onufrak with BP or the undersigned at 301-258-5958.

Sincerely,
URS CORPORATION

Russ Meyer
Maryland Site Manager

Edward Carpenetti
Maryland Project Manager

Cc: Mr. Nick Onufrak, BP RM, Gaithersburg, MD

Table 1

Soil Vapor Extraction Pilot Test Data

BP S/S # 3033
14243 Jarrettsville Pike,
Phoenix, MD

time min.	PID ppm	PID corrected for dilution	Vacuum "H2O	Air Flow cfm	lbs per hour	lbs in period	cumulative lbs	TF-05 Vac "H2O	TF-04 Vac "H2O	TF-02 Vac "H2O	TF-03 Vac "H2O	MW-02R Vac "H2O	MW-01R Vac "H2O	Notes
0	0	0	0	0	0.00000	0.00000	0.00000	0	0	0	0	0	0	75% Dilution
10	0	0	4	58	0.00000	0.00000	0.00000	4	0.015	0.02	0.02	0	0	
20	0	0	4	59	0.00000	0.00000	0.00000	4	0.015	0.02	0.02	0	0	
30	0	0	4	57	0.00000	0.00000	0.00000	4	0.08	0.08	0.06	0.22	0	
40	3.7	14.8	4	55	0.00277	0.00046	0.00046	4	0.08	0.08	0.06	0.22	0	
50	1.8	7.2	4	55	0.00135	0.00022	0.00069	4	0.08	0.08	0.06	0.22	0	
60	1.5	3	4.3	54	0.00110	0.00018	0.00087	4.3	0.08	0.1	0.06	0.22	0	50% Dillution
70	0.2	0.4	4.3	54	0.00015	0.00002	0.00089	4.3	0.08	0.15	0.06	0.22	0	
80	0.2	0.4	4.3	54	0.00015	0.00002	0.00092	4.3	0.08	0.08	0.12	0.22	0	
90	0	0	4.3	53	0.00000	0.00000	0.00092	4.3	0.08	0.08	0.14	0.22	0	
100	0	0	4.3	53	0.00000	0.00000	0.00092	4.3	0.08	0.08	0.14	0.24	0	
110	0	0	10	52	0.00000	0.00000	0.00092	5.2	0.09	0.05	0.05	0.4	0	25 % Dillution
120	0	0	10	52	0.00000	0.00000	0.00092	10	0.15	0.06	0.07	0.51	0	
130	0	0	10.5	52	0.00000	0.00000	0.00092	10.5	0.15	0.18	0.09	0.51	0	
140	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.21	0.1	0.09	0.51	0	
150	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.2	0.18	0.06	0.52	0	
160	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.18	0.14	0.15	0.52	0	
170	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.32	0.14	0.12	0.52	0	0.0 % Dillution
180	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.16	0.18	0.17	0.52	0	
190	0	0	10.5	66	0.00000	0.00000	0.00092	10.5	0.2	0.15	0.18	0.52	0	
200	0	0	10.5	67	0.00000	0.00000	0.00092	10.5	0.18	0.15	0.14	0.44	0	
210	0	0	10	62	0.00000	0.00000	0.00092	7.5	0.15	10	0.18	0.44	0.12	All valves open
220	0	0	10	62	0.00000	0.00000	0.00092	7.5	0.21	10	0.1	0.44	0.12	
230	0	0	10	62	0.00000	0.00000	0.00092	3	0.25	5	0.12	0.3	0.12	
240	0	0	10	62	0.00000	0.00000	0.00092	2.5	0.32	5	0.14	0.22	0.12	

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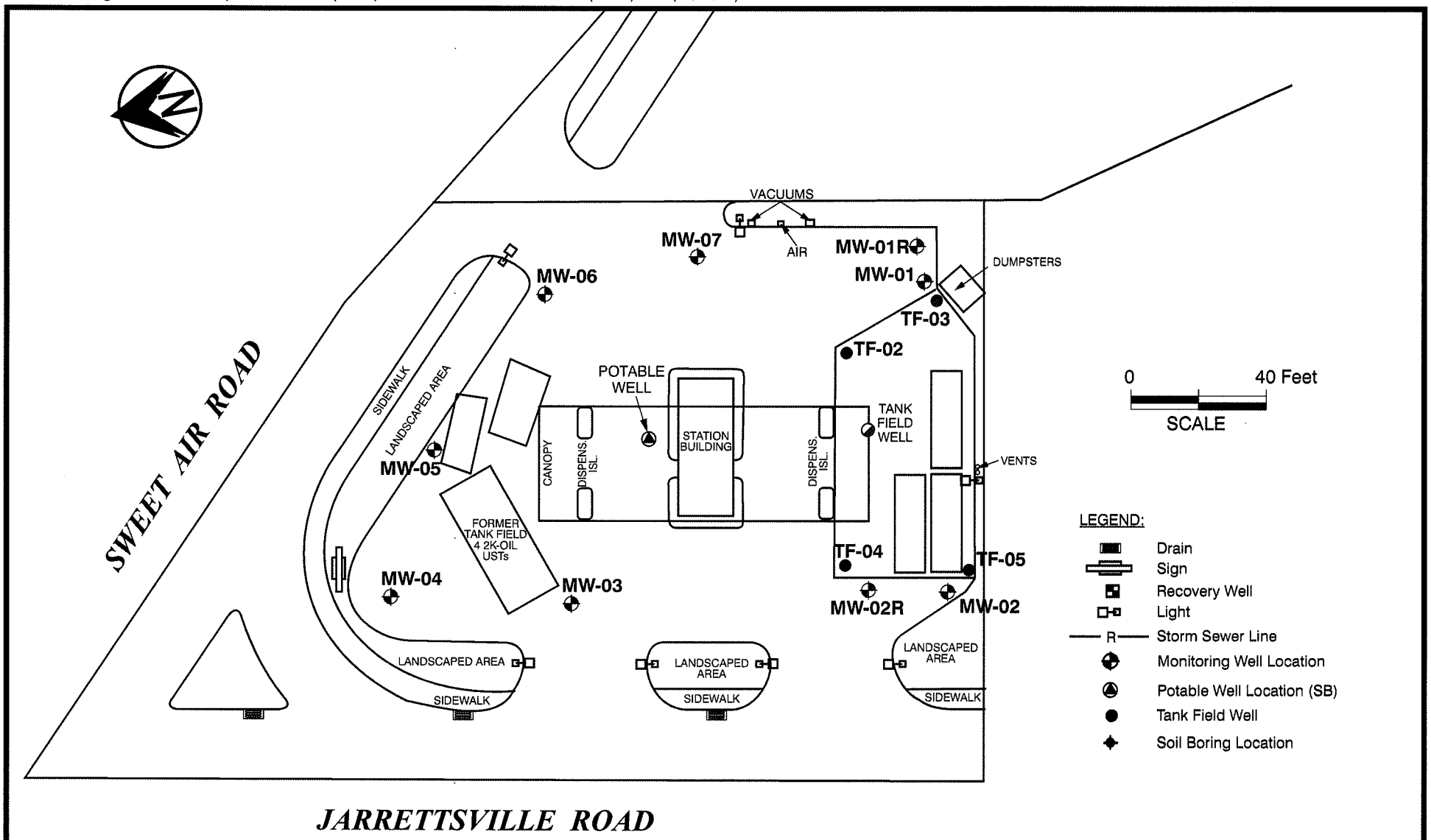

FIGURE 1
SITE MAP
BP SERVICE STATION # 3033
14243 JERRETTSVILLE PIKE
PHOENIX, MARYLAND

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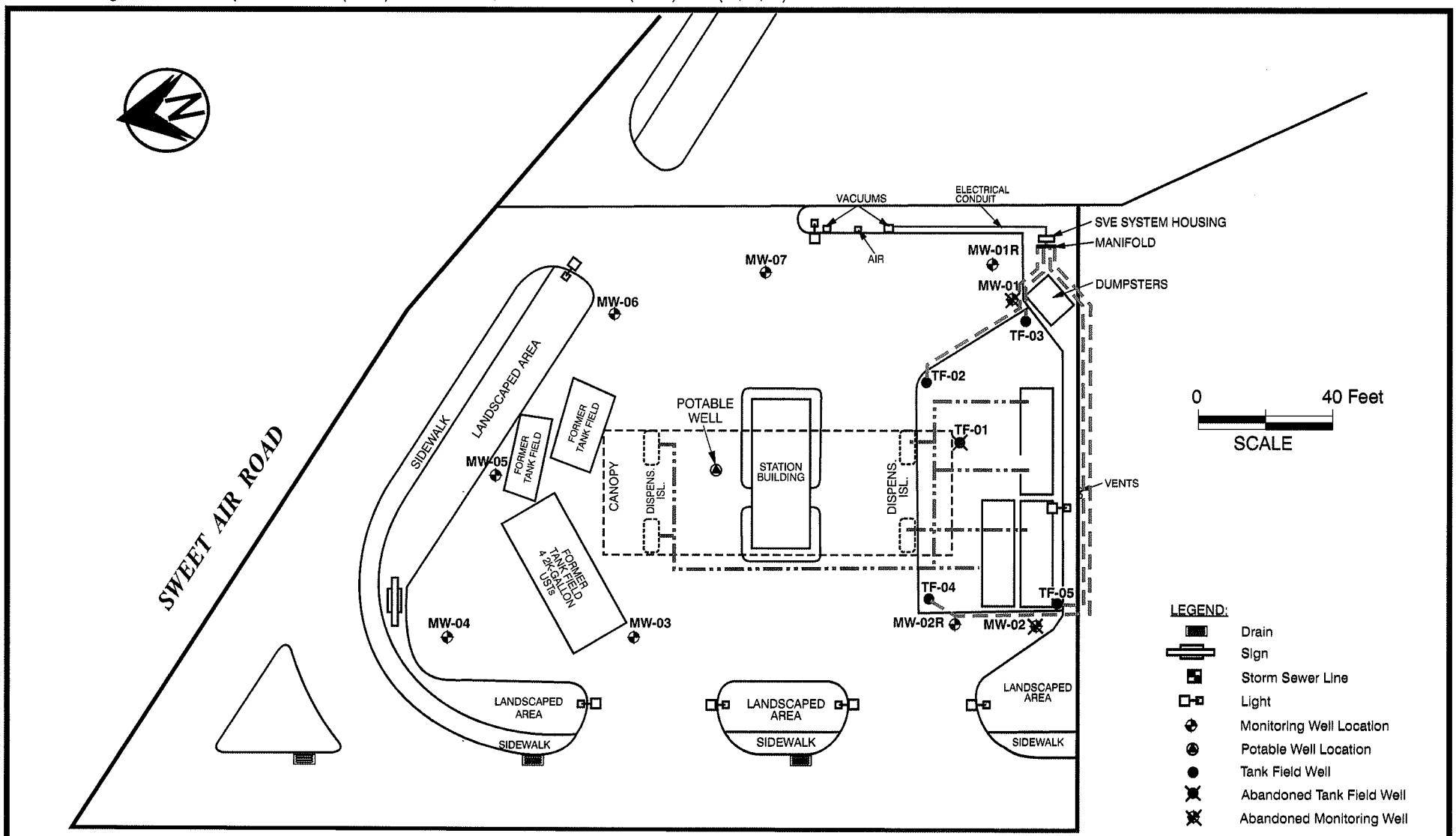

FIGURE 2
PROPOSED TANK FIELD
SVE SYSTEM PIPING SCHEMATIC
BP SERVICE STATION # 3033
14243 JARRETTSVILLE PIKE
PHOENIX, MARYLAND

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